

IMPROVED MOUSE STRUCTURE WITH MULTIPLE EXTENDED  
BUTTONS

**Description**

This invention relates to an improved mouse structure with multiple extended buttons, particularly to a mouse structure that is capable of operating complicated command system by a single hand by means of an improved structure provided with novel button switches.

Button switches have been gradually added to the conventional mouse structure, where variations in the pressing of two fingers and the palm, as well as the improved button structure facilitate control applications in the 3-dimensional space. However, along with the daily improvement and accelerated function enhancement of computer software and hardware, there is a need to further improve the currently available mouse products in order to allow single-hand manipulation, or will otherwise fail to meet the future consumer needs.

This invention relates to an improved mouse structure with multiple extended buttons, with improvement in its button control structure. The invention utilizes the free maneuver space for the thumb to achieve the objectives and effects of providing multiple extended buttons.

This invention relates to an improved mouse structure with multiple extended buttons, with improvement in its palm control structure, to facilitate easy palm manipulation by multiple fingers of a single hand, without losing or complicating the range of the palm control or impeding the processing efficiency.

This invention relates to an improved mouse structure with multiple extended buttons, which preserves the manner and usual practice for operating the conventional products, so as to allow first-time operators to adapt to the new structure.

This invention relates to an improved mouse structure with multiple extended buttons, particularly to a mouse structure that is capable of complicated command system by a single hand by means of an improved structure provided with novel button switches. According to the structure of this invention, maneuver space is provided for the thumb, in accompaniment with four contact points to be selectively pressed by a movable resilient tab. Accordingly, the extending button switches facilitate improvement for future needs.

The foregoing aspects and many of the attendant advantages of the present invention will become more readily appreciated as the same becomes better understood by reference to the following detailed description, when taken in conjunction with the accompanying drawings.

### **Brief Description of Drawings**

Fig. 1 is a schematic view illustrating the appearance of an embodiment of this invention; and

Fig. 2 is a schematic view illustrating the structure of the thumb button switches of an embodiment of this invention.

### **Detailed Description of the Preferred Embodiment**

With reference to Fig. 1 showing a schematic view of the appearance of an embodiment of this invention; wherein a mouse 10 is provided at a front side thereof with conventional buttons 11, and the appearance, structure and relative position of a thumb button 12 of this invention is illustrated.

With reference to Fig. 2 showing a schematic view of the structure of the thumb button switches of an embodiment of this invention, wherein the thumb button 12 is a conductive rubber body that can be coupled by various measures according to the actual needs, such as a pillar-type as shown in the Cross-Sectional View 2-1, which includes four pillar objects 21 that are affixed thereto with movable resilient tabs 21 that are connected at their bottoms to pliable gaskets 24 at four of its bottom points 23, and then coupled to four triggering points 26 (not shown) provided to a circuit board 25, respectively. Since the pillar objects 21 are supported by the pliable gaskets 24, an appropriate gap that prevent contact is maintained between the pillar objects and the triggering points 26. The chosen triggering point 26 will only be pressed and contacted when an external force is applied to the movable resilient tab 22 in any of the four orthogonal directions.

With reference to Fig. 2, a wall-bridge structure having a bridge object 31 that replaces the pillar object 21 and being operated in the push-to-slide way, is shown in the Cross-Sectional View 2-2. Or, a stick structure having a rocker 41 that is encircled by a coil spring 44 is set in the center and so positioned not to contact the triggering points 46 around the circuit board 45, but is operated by an external force that shifts the rocker to contact the chosen triggering points 46, is shown in the Cross-Sectional View 2-3. However, the above variations in embodiments do not depart from the structural concept of the thumb button of this invention.

### **What is claimed is:**

An improved mouse structure with multiple extended buttons, where maneuver space is provided for the thumb, in accompaniment with four contact points to be selectively pressed by a movable resilient tab, characterized in that:

the movable resilient tab includes a conductive body that is supported by pillar objects, a bridge object, or a rocker extending downwards into a housing, which is coupled to a circuit board and selectively contacts different triggering points on the circuit board, wherein a relative gap and pressing stroke is maintained by pliable gaskets or a coil spring.

### **Abstract**

This invention relates to an improved mouse structure with multiple extended buttons, particularly to a mouse structure that is capable of complicated command system by a single hand by means of an improved structure provided with novel button switches. According to the structure of this invention, maneuver space is provided for the thumb, in accompaniment with four contact points to be selectively pressed by a movable resilient tab. Accordingly, the extending button switches facilitate improvement for future needs.

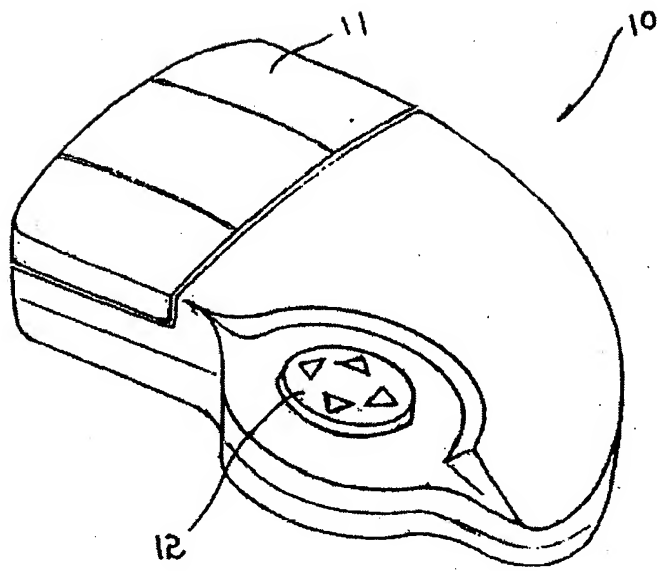


Fig. 1

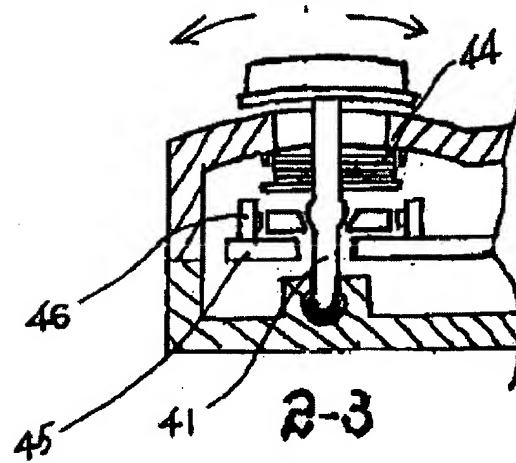
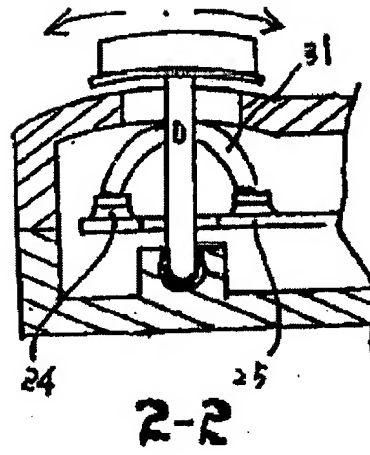
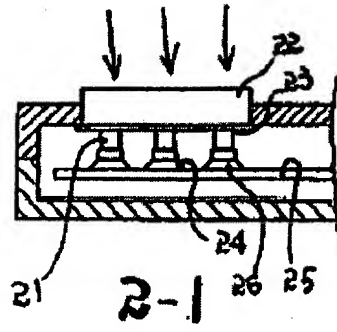


Fig. 2

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公告本

(以上各欄由本局填註)

## 發明專利說明書

一、發明 名稱	中 文	具複增按鍵開關之滑鼠結構改良
	英 文	
二、發明 創作人	姓 名	白銘方
	國 籍	中華民國
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	代 表 人 姓 名	白銘方

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四、中文創作摘要（創作之名稱：

具複增按鍵開關之滑鼠結構改良

本創作係屬一種具複增按鍵開關之滑鼠結構改良，尤指一種滑鼠結構，可一手同時控制更複雜的指令系統，而配置有最新按鍵開關之改良結構所屬者；依本創作結構，主要運用拇指活動空間，配合內裡四個按鍵點，而以一活動彈片供其選擇按壓者；如此，因擴增的按鍵開關，以足敷未來之需要所特別改良創作者。

英文創作摘要（創作之名稱：

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## 五、創作說明（一）

本創作係屬一種具複增按鍵開關之滑鼠結構改良，尤指一種滑鼠結構，可一手同時控制更複雜的指令系統，而配置有最新按鍵開關之改良結構所屬者。

習用滑鼠結構已依目前的需要逐增其按鍵開關，由兩個指頭與手掌之按壓變化，及按鍵本身結構之改良，以提供處理如三度空間之控制應用者；惟隨著電腦軟硬體日新月異與其功能性的快速加強，為求能一手同時掌控，即有必要再改良目前的滑鼠產品，否則，無以適時提供市場之未來需求者。

如本創作係屬一種具複增按鍵開關之滑鼠結構改良，乃改良其按鍵控制結構，並應用其拇指之間置活動空間，以達到複增其按鍵開關之創作目的與功效者。

如本創作係屬一種具複增按鍵開關之滑鼠結構改良，乃改良其掌控結構，以方便仍由一手之數手指輕易操作掌控，而不脫離與繁增其掌控範圍與處理時效者。

如本創作係屬一種具複增按鍵開關之滑鼠結構改良，仍保留原習用品之操作方式與習慣，使操作者經初始學習即能熟悉上路者。

如本創作係屬一種具複增按鍵開關之滑鼠結構改良，尤指一種滑鼠結構，可一手同時控制更複雜的指令系統，而配置有最新按鍵開關之改良結構所屬者；依本創作結構，主要運用拇指活動空間，配合內裡四個按鍵點，而以活動彈片供其選擇按壓者；如此，因擴增的按鍵開關，以

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## 五、創作說明（二）

足敷未來之需要所特別改良創作者。

為使貴審查委員能更加明瞭本創作之結構與功效，茲配合圖示分別說明如下列：

圖示簡單說明：

第一圖係本創作之外觀實施例示意圖；

第二圖係拇指按鍵開關之結構實施例示意圖。

圖示詳細說明：

請參閱第一圖係本創作之外觀實施例示意圖，其中該滑鼠10前方保留有原按鍵11，但拇指按鍵12則是本創作之結構外觀與其所在之相關位置者。

請參閱第二圖係拇指按鍵開關之結構實施例示意圖，其中該拇指按鍵12為具導電之橡膠體，可依不同需要而選擇採用不同的銜接方式，包含如2-1剖面圖之直柱型，採四個直柱體21，其上固接活動彈片22於其底面四方之點23，下接軟性彈圈24，再個別銜接電路板25表面之四個按鍵點26（在此未顯示）；但直柱體21因受軟性彈圈24支撐之故，尚與各個按鍵點26保留有不接觸之適當間隙；惟經以外力按壓活動彈片22於東南西北之任何一方時，才有下壓接觸該被選擇的按鍵點26之可能者。

續請參閱第二圖，其中包含如2-2剖面圖之橋柱型，乃以橋柱體31替換其直柱體21，而以推滑方式操作者；或如2-3剖面圖之搖桿型，其搖桿體41由中設之彈簧圈44圍繞，並定位其不接觸電路板45四方突起之按鍵點46，而以

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### 五、創作說明(三)

受外力搖向選擇其按鍵點46為操作方式；惟以上皆屬不同實施例，但不超出本創作拇指按鍵12之結構原理範圍者。

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## 六、申請專利範圍

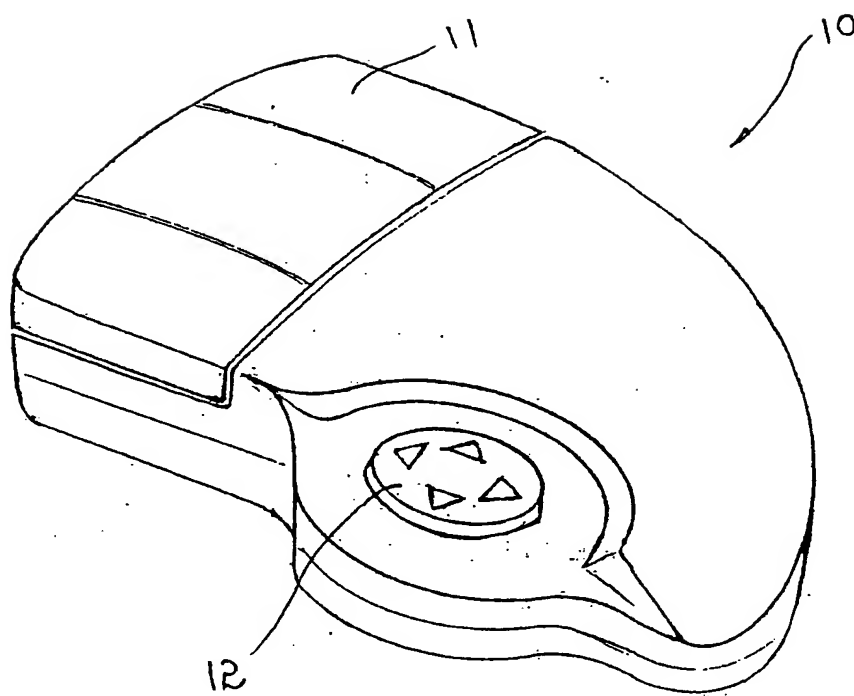
一種具複增按鍵開關之滑鼠結構改良，依本創作結構，主要係運用拇指活動空間，配合其機體內裡四個按鍵點，而以一活動彈片供其選擇按壓者，其特徵在於：該活動彈片具導電體，是由其延伸入機體內裡下方所設不同型式之直柱體，橋柱體或搖桿體所支撐，但其銜接式電路板與選擇接觸電路板上之不同按鍵點，是由不同型之軟性彈圈或彈簧圈為保持相對間距與按壓行程者。

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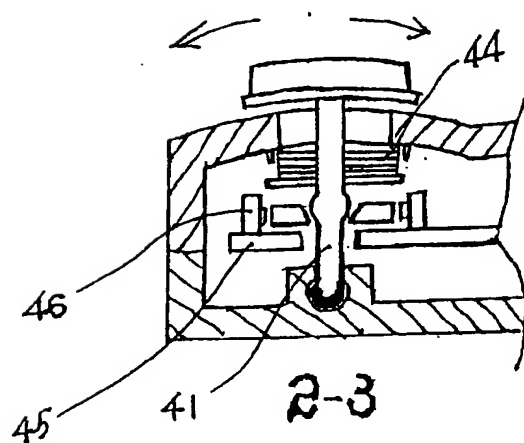
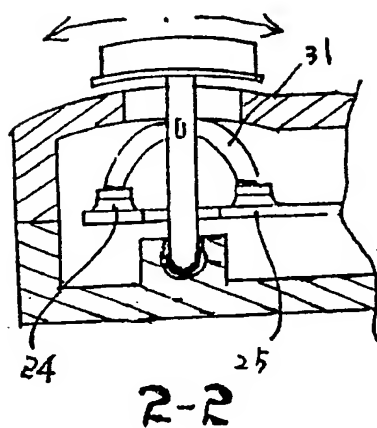
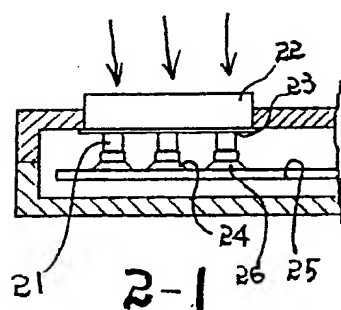
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第一圖

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第二圖